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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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09/617,086

07/14/2000

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649-753P

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EXAMINER

LAO, LUN S

ART UNIT

PAPER NUMBER

2615

NOTIFICATION DATE

DELIVERY MODE

07/22/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

|                              |                                      |  |  |
|------------------------------|--------------------------------------|--|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/617,086 | <b>Applicant(s)</b><br>TSUJISHITA ET AL. |  |
|                              | <b>Examiner</b><br>LUN-SEE LAO       | <b>Art Unit</b><br>2615                  |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 March 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5 and 7-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5, 7 and 12-21 is/are allowed.
- 6) ☒ Claim(s) 8-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### *Introduction*

1. This is in response to the amendment filed on 03-27-2008. Claim 8 has been amended and claim 6 has been cancelled. Claims 1-5 and 7-21 are pending.

### ***Continued Examination Under 37 CFR 1.114***

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04-28-2008 has been entered.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai (US PAT. 4,727,580) in view of Tsuji (JP 11-186924).

Consider claim 8, Sakai teaches that a noise removal apparatus comprising:

a first demodulator (see fig.1 (26)) configured to produce a demodulation signal, the demodulation signal having information corresponding to audio signals of a plurality of channels, each of the audio signals corresponding to a respective one of the plurality of channels (see col. 3line 35-col. 4 line 50);

an audio signal demodulator (18) configured to receive and demodulate the demodulation signal produced by the first demodulator (26) in order to obtain the audio signals corresponding to each of the plurality of channels (R, L) from the demodulation signal, the audio signal demodulator further being configured to output the audio signals (see fig.6 and col. 6 line 10-68);

a noise detector (17) configured to receive the demodulation signal communicated between the first demodulator (26) and the audio signal demodulator (18), the noise detector (17) further being configured to detect noise in the received demodulation signal (see col. 2line 10-68); and

a corrector (19) independently configured to correct the detected noise in each audio signal, which is outputted from said audio signal demodulator, according to the output of said noise detector (see fig.4 and col. 4 line 50-col. 5 line 60); but Sakai does not explicitly teach at least one corrector configured to: receive the audio signals respectively corresponding to the plurality of channels outputted from the audio signal demodulator, and independently correct the detected noise in each of the audio signals, outputted from said audio signal demodulator according to the output of said noise detector; and wherein the at least one corrector selects between different techniques

for independently correcting the detected noise in each of the audio signals based on a detected level of a high band component in the audio signal.

However, Tsuji teaches at least one corrector configured to (see fig. 10 (23)): receive the audio signals respectively corresponding to the plurality of channels (Rch, Lch) outputted from the audio signal demodulator(5), and independently correct the detected noise in each of the audio signals, outputted from said audio signal demodulator according to the output of said noise detector (20)(see figs. 10-15 and see detail disruption page 5 [0029]-page 6[0034]); and wherein the at least one corrector( see fig.10(23)) selects between different techniques for independently correcting the detected noise(20) in each of the audio signals based on a detected level of a high band component(21) in the audio signal (see figs. 10-16 and see detail disruption page 5 [0029]-page 6[0035]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Sakai in to the teaching of Tsuji to provide an apparatus for the separation and demodulation of such signal would benefit from the ability to adjust to this temporal variation to reduce the noise.

Consider claim 9 Tsuji et al. teaches that the noise removal apparatus of said noise detector (see fig.10, 20) conducts the noise detection such that, for each predetermined period which alternates among a plurality of channels, a portion of the period respectively overlaps with each other (see detail disruption page 5 [0024]-[0030] and figs 8-12 and see the discussion above claim 8).

Consider claims 10-11 Sakai teaches that the noise removal apparatus of the output of said noise detector (see fig.1 (17)), a generation condition of the noise is detected, and corresponding to the detected result, the detection sensitivity of said noise detector (17) is controlled (see fig.4 and col. 4 line 50-col. 5 line 60); and an audio output apparatus including said noise removal apparatus (see fig.4 and col. 4 line 50-col. 5 line 60).

***Allowable Subject Matter***

5. Claims 1-5, 7, and 12-21 allowed.

***Response to Arguments***

6. Applicant's arguments filed 03-27-2008 have been fully considered but they are not persuasive.

Regarding applicant argued that claims 8-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,727,580 to Sakai (hereafter "Sakai") in view of Japanese patent publication No. JP 11-186924 to Tsuji (hereafter Tsuji). This combination rejection is improper under § 103 (see remarks page 9).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in

the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, U.S. Patent No. 4,727,580 to Sakai (hereafter "Sakai") and Japanese patent publication No. JP 11-186924 to Tsuji they both teach a FM receiver and a noise elimination circuit.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Sakai in to the teaching of Tsuji to provide an apparatus for the separation and demodulation of such signal would benefit from the ability to adjust to this temporal variation to reduce the noise.

Applicant further argued that Sakai and Tsuji do not teach or suggest that the at least one corrector selects between different techniques for independently correcting the detected noise in each of the audio signals based on a detected level of a high band component in the audio signal.

The examiner disagrees that. Tsuji teaches that at least one corrector( see fig.10(23)) selects between different techniques for independently correcting the detected noise(20) in each of the audio signals based on a detected level of a high band component (21) in the audio signal (see figs. 10-16 and see detail disruption page 5 [0029]-page 6[0035]). It meets the limitation as recited in claim 8.

### **Conclusion**

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Matsumoto (US PAT. 5,630,217) is cited to show other related the noise reduction apparatus and audio output apparatus.

8. Any response to this action should be mailed to:

Mail Stop \_\_\_\_ (explanation, e.g., Amendment or After-final, etc.)

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Facsimile responses should be faxed to:

**(571) 273-8300**

Hand-delivered responses should be brought to:

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lao,Lun-See whose telephone number is (571) 272-7501. The examiner can normally be reached on Monday-Friday from 8:00 to 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin, can be reached on (571) 272-7848.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 whose telephone number is (571) 272-2600.

Lao,Lun-See  
/LUN-SEE LAO/  
Examiner, Art Unit 2615  
Patent Examiner  
US Patent and Trademark Office  
Knox  
571-272-7501  
Date 07-15-2008

/Vivian Chin/  
Supervisory Patent Examiner, Art Unit 2615